

## ABSTRACT

There is provided a PTS (Partial Transmit Sequence) OFDM (Orthogonal Frequency Division Multiplexing) scheme for reduction of a PAPR (Peak-to-Average Power Ratio). In an OFDM transmitting apparatus for peak power reduction according to the present invention, an rotational sub-block partitioner partitions an input data block of length N into M, the number of sub-block, and distributes the partitioned data of each data block in M sub-blocks one by one rotationally. M IFFTs (Inverse Fast Fourier Transformers) perform N/M-point IFFT on N/M data assigned to each of the M sub-blocks and M coefficient multipliers multiply the N/M data output from each IFFT by a predetermined coefficient to give orthogonality to the frequency components of the N/M output data. A phase factor optimizer optimizes M phase factors to minimize a PAPR using the N/M output values of each coefficient multiplier. M multipliers multiply the optimized M phase factors by the outputs of the coefficient multipliers. A transmitter sums the outputs of the M multipliers on a symbol-to-symbol basis in the same positions and transmits the sum.